

REMARKS

The Examiner rejected claim 7 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner rejected claims 1-8 and 17-20, as best understood, under 35 U.S.C. § 102(b) as allegedly anticipated by or, in the alternative under 35 U.S.C. § 103(a) as allegedly obvious over Zambrano 5,426,320.

The Examiner rejected claims 1-8 and 17-20 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Zambrano in view of Russ '750 of record.

Applicants respectfully traverse the § 112, § 102(b) and § 103(a) rejections with the following arguments.

35 U.S.C. §112, Second Paragraph

The Examiner rejected claim 7 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention (page 2 of the Office Action, mailed February 15, 2006). In response, the Applicants respectfully traverse the § 112 rejection.

In response to the Examiner's arguments in page 2 of the Office Action (mailed February 15, 2006), paragraph 3, Applicants have amended claim 7. As a result, firstly, the "opening" remains in claim 7 making claim 7 consistent with claim 1. Secondly, "configured" is replaced with "capable of", which is not vague. Finally, "an increase of temperature" is definite. Therefore, claim 7 is not indefinite under 35 U.S.C. § 112, second paragraph and is in condition for allowance.

35 U.S.C. §102(b) and/or 103(a)

The Examiner rejected claims 1-8 and 17-20, as best understood, under 35 U.S.C. § 102(b) as allegedly anticipated by or, in the alternative under 35 U.S.C. § 103(a) as allegedly obvious over Zambrano 5,426,320 (page 3, fourth paragraph of the Office Action, mailed February 15, 2006).

Regarding claim 1, Applicants respectfully contend that Zambrano does not anticipate claim 1, because Zambrano does not teach each and every feature of claim 1. For example, Zambrano does not teach "both the anode and the cathode are (i) in direct physical contact with the second layer and (ii) not in direct physical contact with the first layer" of claim 1. More specifically, in FIG. 1 of Zambrano, although there is a cathode 12 in direct physical contact with the second layer 11, there is no anode which is both (i) in direct physical contact with the second layer 11 and (ii) not in direct physical contact with the first layer 10, as claimed in claim 1.

Based on the preceding arguments, Applicants respectfully maintain that Zambrano does not anticipate claim 1, and that claim 1 is in condition for allowance.

Regarding claims 2-8, since claims 2-8 depend from claim 1, Applicants contend that claims 2-8 are likewise in condition for allowance.

Regarding claim 17, Applicants respectfully contend that Zambrano does not anticipate claim 17, because Zambrano does not teach each and every feature of claim 17. For example, Zambrano does not teach "both the anode and the cathode are (i) in direct physical contact with the second layer and (ii) not in direct physical contact with the first layer" of claim 17. More specifically, in FIG. 1 of Zambrano, although there is a cathode 12 in direct physical contact with

the second layer 11, there is no anode which is both (i) in direct physical contact with the second layer 11 and (ii) not in direct physical contact with the first layer 10, as claimed in claim 17.

Based on the preceding arguments, Applicants respectfully maintain that Zambrano does not anticipate claim 17, and that claim 17 is in condition for allowance.

Regarding claims 18-20, since claims 18-20 depend from claim 17, Applicants contend that claims 18-20 are likewise in condition for allowance.

35 U.S.C. § 103(a)

The Examiner rejected claims 1-8 and 17-20 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Zambrano in view of Russ '750 of record (page 3 of the Office Action, mailed February 15, 2006).

Regarding claims 1 and 17, Applicants contend that claims 1 and 17 are not unpatentable over Zambrano in view of Russ because Zambrano in view of Russ still does not teach or suggest "both the anode and the cathode are (i) in direct physical contact with the second layer and (ii) not in direct physical contact with the first layer" of claims 1 and 17. The detail arguments are similar to those above.

Regarding claims 2-4, 7, and 8, since these claims depend from claim 1, Applicants contend that claims 2-4, 7, and 8 are likewise in condition for allowance.

Regarding claim 20, since claim 20 depends from claim 17, Applicants contend claim 20 is likewise in condition for allowance.

Regarding claims 5 and 6, since claims 5 and 6 depend from claim 1, which is in condition for allowance as argued above even in view of Russ, Applicants contend that claims 5 and 6 are likewise in condition for allowance.

Regarding claim 18, since claim 18 depends from claim 17, which is in condition for allowance as argued above even in view of Russ, Applicants contend that claim 18 is likewise in condition for allowance.

In addition, Zambrano in view of Russ does not teach or suggest "a third layer extending from the surface of the substrate down in direct physical contact with the first layer, the third layer comprising the semiconductor material" of claim 18 (bold emphasis added). More

specifically, although Russ shows third layer (sinker contact) 2061/2062 (FIG. 2), there is no motivation to use this third layer 2061/2062 in Zambrano. It should be noted that in Zambrano, FIG. 1, the first layer 10 is at top of the semiconductor substrate 2. Therefore, there is no room for a third semiconductor layer extending from the surface of the substrate 2 down as claimed in claim 18. In other words, there is no motivation to use this third layer 2061/2062 of Russ in Zambrano.

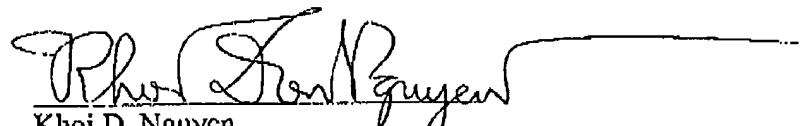
Based on the preceding arguments, Applicants respectfully maintain that claim 18 is not unpatentable over Zambrano in view of Russ, and that claim 18 is in condition for allowance.

Regarding claim 19, since claim 19 depends from claim 18, which is in condition for allowance as argued above, Applicants contend that claim 19 is likewise in condition for allowance.

CONCLUSION

Based on the preceding arguments, Applicants respectfully believe that all pending claims and the entire application meet the acceptance criteria for allowance and therefore request favorable action. If the Examiner believes that anything further would be helpful to place the application in better condition for allowance, Applicants invites the Examiner to contact Applicants' representative at the telephone number listed below. The Director is hereby authorized to charge and/or credit Deposit Account No. 09-0456.

Date: May 03, 2006



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